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Remarks

This amendment is made in response to the Office Action issued on the above entitled application dated June 29, 2006 in which the examiner rejected claims 1 and 3 under 35 USC 102 (b) as being anticipated by Olson and rejected claims 2 and 4 under 35 USC 103 (a) as being unpatentable over Olson in view of Austin. Olson is cited as showing a seed planter and a spacer and Austin is cited as showing a tapered edge as required by claims 2 and 4.

In the course of the Office Action, the examiner stated that the upper end 156 of a seed tube 26 is necessarily moveable with respect to a chute 44 in a direction perpendicular to the directional movement of the planter 10. The applicant does not deny this statement. In fact, the sole purpose of the present invention is to minimize or reduce such movement because the movement between the two parts changes the rate at which the seeds fall down the seed tube. Where there is movement between the parts, one seed will encounter a side wall of the seed chute and ricochet down the chute whereas a second seed will not encounter the wall and not ricochet and fall more rapidly down the chute. By reducing the movement of the seed tube with respect to the chute, successive seeds that fall down the chute encounter the same contour of the seed chute.

The forgoing amendment is intended to further clarify that the spacer that is the subject of the present claims limits movement in a direction perpendicular to the movement of the tractor as it moves across a field to plant seed as explained in the applicant's preceding amendment filed May 4, 2006. As explained following the

applicant preceding amendment, the spacer of the present invention is intended to reduce seed bounce of a seed dropping through a seed tube where the bounce occurs between the side walls of the tube where the side walls are parallel to the direction of movement of the tractor. The applicant submits the forgoing amendments are minor and do not require a further search by the examiner and therefore should be entered.

The applicant hereby traverses the examiner's rejection of claims 1 and 3 under 35 USC 102 (b) as being anticipated by Olson. The Olson reference discloses a seed tube 26 that attaches to a seed chute of a metering unit 24 for dispensing seeds. The examiner asserts that Olson discloses a spacer "unnumbered; bottom rightmost member of 44 in Fig. 11," and that the spacer is "to reduce lateral movement of one with respect to the other." The applicant respectfully disagrees with the examiner as to this allegation. As can be seen from the cover page of Olson, the Olson patent is assigned to Deere and Co., the same John Deere that manufactures the seed planting machine described in the present application. Comparing the drawings of Olson with the drawings of the present application, one can see that the seed tube 26 of Olson is virtually identical to the seed tube 48 described in the present application. Comparing Fig. 11 of Olson to Fig. 11 of the present application, one can see that the seed tube of Olson has the same curve as the seed tube 48 of the present application. Fig. 12 of Olson is virtually identical to the cross-section of the seed tube 48 shown in Figs. 17 and 18 of the present application. Olson discloses the seed tube described in the present application the upper end of which is considerably larger than the lower end of the

seed chute such that the upper end of the seed tube rattles with respect to the seed chute. When the seed tube moves in one direction relative to the seed chute, a falling seed encounters the side of the tube and bounces more than when the seed tube is in the opposite position with respect to the seed chute. As a result, one seed will fall more rapidly than another and the seeds will be unevenly spaced. The Olson reference is concerned by seed rattle caused by the seed hitting the forward surface 64 of Olson and not occurring between the side walls that extend parallel to the direction of movement as is the case of the present application.

The examiner asserts that Fig. 11 discloses a spacer between the upper end of the seed tube and the lower end of the seed chute, but this is not the case. Fig. 11 simply discloses the very same seed tube depicted in Figs. 11, 12, 17 and 18 of the present application and does not disclose a spacer such as spacer 160. Olson fails to appreciate that seed bounce that occurs between the side walls that are parallel to the direction of motion can be every bit as responsible for uneven spacing of seeds as the bounce caused by the forward surface 164 of the seed tube.

Claim 1 of the present application requires "a spacer between a surface of said seed chute and a surface of said seed tube to reduce said lateral movement of one with respect to the other." Claim 3 requires a spacer "attachable to one of an outer surface of said seed chute and an inner surface of said seed tube." The applicant challenges the examiner to identify a separate spacer, required by claims 1 and 3, and "a surface of said seed chute" and "a surface of said seed tube," as required by both claims 1 and 3. Where does Olson show a spacer "attachable"

top such a surface? The examiner cannot find such a distinction because *there is* no spacer disclosed by Olson.

The applicant believes that the examiner's objection is not that the elements of the present claims are disclosed by Olson, but that, in the opinion of the examiner, the invention is unpatentable by virtue of its simplicity. The applicant submits that this is unfair because the spacer, which is the subject of the present claims, significantly improves the effectiveness of the seed planter.

It should be appreciated that the pending claims of the present application do not prevent John Deere from re-engineering the upper end of the seed tube to fit more tightly with respect to the seed chute. The claims merely prevent a competitor from duplicating the spacer manufactured by the applicant. The applicant believes that the claims as stated clearly define over the references the examiner has cited and that the rejection under USC 102 should be withdrawn.

In similar fashion, the applicant traverses the rejection of claims 2 and 4 under 35 USC 103 (a) as being unpatentable over Olson in view of Austin. Olson is cited for the same elements cited with respect to claims 1 and 3 and Austin is cited as showing a tapered surface. With respect to Austin, the applicant challenges the examiner to specify the edge depicted in Olson Fig. 11 that the examiner would have tapered in accordance with claim 2. The applicant asserts that there is no edge of Olson that could be tapered that would improve the assembly of the parts without further increasing the movement of one part with respect to another, and this is because Olson does disclose a spacer as the

examiner has asserted. The applicant therefore submits that the rejection of claims 2 and 4 under 35 USC 103 (a) must also be withdrawn.

In view of the forgoing, the applicant submits that the claims of the application are in condition for allowance, and favorable reconsideration and allowance is requested.

Respectfully Submitted,



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